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TO AMEMBASSY PARIS

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E.O. 11652: N/A

TAGS: TECH

SUBJECT: U.S.-FRENCH INFORMATION EXCHANGE MEETING

1. REGARDING NOVEMBER 5-6, 1976, MEETING IN U.S. ON NEW EXCHANGE ARRANGEMENT, REQUEST SCI COUNSELOR TRANSMIT TO A. MESSIAH, SACLAY, THE FOLLOWING MODIFICATIONS OF TECHNICAL ITEMS OF PROPOSED AGENDA:
 - A. DISCUSS ECCS CRITERIA QUESTIONS (ITEM 1, SECTION II) UNDER SECTION III.
 - B. ADD "TEMPERATURE RAMP BURST TEST DATA" TO TOPICS LISTED UNDER SECTION II.
 - C. ADD FOLLOWING ADDITIONAL TOPICS UNDER SECTION III:
 - 1) CODES FOR ANALYZING THE LOCA FORCES ON A FUEL ASSEMBLY
 - 2) ANALYSIS METHOD (AND COMPUTER CODE) FOR THE FUEL ASSEMBLY RESPONSE TO COMBINED EFFECT OF SEISMIC AND LOCA
 - D. LIST FOLLOWING ADDITIONAL TOPICS UNDER SECTION V-FUEL:
 - 1) ZIRCONIUM IRRADIATION CREEP DATA
 - 2) EXPERIMENTS IN WHICH FUEL CENTERLINE TEMPERATURES WERE MEASURED

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- 3) PELLET CRACKING AND RELOCATION DATA

- 4) UNRESTRAINED FUEL SWELLING DATA
- 5) CRUD FORMATION EXPERIENCE
- 6) OVERPOWER TEST DATA OR EXPERIENCE
- 7) PELLET CLADDING MECHANICAL INTERACTION DATA
- 8) PROLONGED OPERATION OF FUEL RODS IN POST-CHF REGIME
- 9) THRESHOLD ENERGIES FOR FUEL FAILURE DURING TRANSIENTS
- 10) DENSIFICATION RELATED DATA: DENSITIES, STACK LENGTH CHANGES, POWER SPIKES
- 11) STRESS-CORROSION BEHAVIOR AND THEORY IN ZIRCONIUM-HALIDE SYSTEMS
- 12) CONDUCTIVITY BEHAVIOR OF GAS MIXTURE: JUMP DISTANCES AND THERMAL CONDUCTIVITIES OF GASES
- 13) CHANGE IN ZIRCALOY SHEAR STRESS WITH FLUENCE
- 14) FISSION GAS RELEASE DATA UNDER STEADY STATE AND TRANSIENT CONDITIONS
- 15) MODELING CODES--RELATED TO MODELING OF STEADY STATE AND TRANSIENT FUEL ROD BEHAVIOR
- 16) ANALYSIS METHOD FOR PREDICTING AMPLITUDE AND FRETTING WEAR DUE TO FLOW INDUCED VIBRATION
- 17) CALCULATIONAL METHOD AND TEST DATA ON: (I) CREEP COLLAPSE OF CLADDING, (II) ROD BOWING
- 18) CALCULATIONAL METHOD FOR CLADDING STRAIN AND RUPTURE, AND EXPERIMENTAL VERIFICATION
- 19) CREEP RUPTURE-FATIGUE INTERACTION OF CLADDING (ZR)

E. ADD TOPIC ON DISCUSSION OF RESEARCH RELATED TO CONTAINMENT, INCLUDING CONTAINMENT TYPES, ANALYSES AND CODES, EXPERIMENTAL EFFORTS, TREATMENT OF ENERGY SOURCES, HEAT SINKS, AND TREATMENT OF LOCA DYNAMICS INSIDE CONTAINMENT. FURTHER, BELIEVE IT WOULD BE BENEFICIAL IF MIR WOULD ALSO DISCUSS ANY INDEPENDENT WORK CARRIED OUT IN CONNECTION WITH MARVIKEN PROJECT.

F. BELIEVE GENERAL PRESENTATION BY MIR ON LWR SAFETY RESEARCH PROGRAMS, AND ANY NEW EXPERIENCE ON FUEL BEHAVIOR, WOULD ALSO BE OF VALUE.

G. WE HAVE BEEN ADVISED THAT ONE OF THE CAUSES OF DELAY IN CONSTRUCTION OF THE FESSENHEIM I REACTOR WAS NEW REQUIREMENTS FOR A SPECIAL APPLICATION OF THE INSIDE UNCLASSIFIED

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CLADDING TO MEET CORROSION REQUIREMENTS. COULD YOU TELL US WHAT SPECIAL REQUIREMENTS FRANCE IS IMPOSING ON APPLICATION OF THIS CLADDING?

H. AEC-REGULATION TECHNICAL STAFF WISHES INCLUDE IN DISCUSSIONS FOLLOWING SAFETY MATTERS IN CONNECTION WITH LMFBR CONCEPT:

- 1) HOW ARE NEW CONCEPTS LIKE LMFBR LICENSED IN FRANCE?

WHAT IS TECHNICAL SAFETY BASIS? HOW IS BASIS DOCUMENTED AND PROVIDED TO SAFETY AUTHORITIES? MAY WE HAVE RELEVANT SAFETY EVALUATION REPORTS?

2) ENGINEERED SAFETY FEATURES; E.G., CONTAINMENT, MOLTEN CORE CATCHERS, REQUIRED FOR PHENIX, FOR SUPER-PHENIX? DEVELOPMENT PROGRAMS AND SCHEDULES ASSOCIATED WITH THESE FEATURES AND THEIR SELECTION.

3) FRENCH VIEWS ON PREDICTABILITY OF SEQUENCE AND CONSEQUENCES OF CORE DISRUPTIVE ACCIDENTS? ARE SUCH ACCIDENTS CONSIDERED AS ESTABLISHING DESIGN BASIS? IN VIEW OF UNCERTAINTIES REGARDING SUCH ACCIDENTS, HOW ARE THE DESIGN AND SAFETY-APPROVAL BASES ESTABLISHED? WHAT DATA USED TO CONFIRM ANALYSIS MODELS, PARTICULARLY RAPSODIE AND CABRI DATA?

4) FRENCH VIEWS ON SHUTDOWN SYSTEM REALIBILITY TO ELIMINATE SERIOUS ACCIDENTS FROM DESIGN BASIS. IS TECHNOLOGY NOW CONSIDERED ADEQUATE TO PLACE HIGH DEGREE OF RELIANCE ON RELIABILITY OF SHUTDOWN ACTION? HOW ARE REQUIRED RELIABILITY OR PRESENT RELIABILITY CURRENTLY EXPRESSED NUMERICALLY?

5) SAFETY RELATIONSHIP BETWEEN RAPSODIE AND PHENIX, AND PHENIX AND SUPER-PHENIX. HAS PHENIX EXPERIENCE LED TO SAFETY CHANGES FOR SUPER-PHENIX? DESIGN BASIS ACCIDENTS AND ENGINEERED SAFETY FEATURES FOR EACH PLANT, AND HOW RELATED.

6) TESTING AND DEVELOPMENT PROGRAMS BEING CONDUCTED FOR SAFETY DECISIONS AND LICENSING. DESCRIPTION OF THESE PROGRAMS, THEIR SCHEDULES AS RELATED TO PLANT DESIGN AND CONSTRUCTION SCHEDULES IS NEEDED.

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UL CURRENT RADIOLOGICAL DOSE CRITERIA FOR LMFBR'S, PARTICULARLY FOR PLUTONIUM AND OTHER ACTIVITIES. DESCRIPTION OF TECHNICAL BASES AND UNCERTAINTIES ON THESE CRITERIA OR GUIDELINES. DESCRIPTION OF ACCIDENT OR OTHER RELEASE PATHWAYS WHICH CONSIDERED IN THE RADIOLOGICAL EVALUATION.

8) DISCUSSION OF DATA RELATED TO BEHAVIOR OF FAST REACTOR FUEL PINS UNDER TRANSIENT OVERPOWER AND LOSS OF FLOW CONDITIONS.

I. ADD TOPIC ON EXCHANGES OF OPERATING DATA ON FRENCH POWER REACTORS. U.S. PUBLISHES EXPERIENCE ON U.S. REACTORS IN SEVERAL FORMS. WOULD LIKE TO KNOW WHAT FRENCH REPORTS (POSSIBLY BY EDF) CAN BE OBTAINED. AS MINIMUM, WOULD LIKE SEMIANNUAL OR ANNUAL SUMMARY OF ALL "ABNORMAL OCCURRENCES",

WITH EXPLANATIONS OF DISPOSITIONS, AND PROMPT ADVICE ON SERIOUS INCIDENTS. IMPORTANT THAT COMPREHENSIVE, OFFICIAL SUMMARY DATA BE MADE AVAILABLE.

J. ADD TOPIC ON EXPORT REGULATIONS. IMPORTANT WE KNOW OF FRENCH GOVERNMENT EXPORT LICENSE REQUIREMENTS AND PROCEDURES. REQUEST DESCRIPTION OF PROGRAM AND INFORMATION REGARDING LICENSES REQUIRED FOR EXPORT. WHAT COMPONENTS OR MATERIALS REQUIRE SUCH LICENSING? DOES MIR OR OTHER GOVERNMENT AGENCY ANALYZE DESIGN AND INSPECT EXPORT COMPONENTS FOR SAFETY, WHAT SAFEGUARDS AND STAFF TRAINING REQUIREMENTS ARE IMPOSED, AND WHETHER FRENCH WILL INSIST ON IAEA SAFETY REVIEW OF EXPORTED REACTORS?

K. ADD TOPIC ON STANDARDS AND GUIDES. WHAT FRENCH STANDARDS AND GUIDES BEING DEVELOPED? WILL THESE BE AVAILABLE IN ENGLISH? WHEN AVAILABLE? WHAT IS FRENCH GOVERNMENT POLICY ABOUT USE OF U.S. AND OTHER FOREIGN STANDARDS IN FRENCH CONSTRUCTION?

L. HOW DO THE FRENCH DEVELOP STANDARDS FOR NUCLEAR SAFETY, SAFEGUARDS, AND ENVIRONMENTAL PROTECTION? WHO RESPONSIBLE FOR ISSUING STANDARDS? HOW COMMENTS FROM OTHER ORGANIZATIONS AND INDIVIDUALS SOLICITED AND INCORPORATED? IS THERE VOLUNTEER STANDARDS EFFORT IN FRANCE SIMILAR TO THAT IN THE UNITED STATES CONDUCTED BY ASME, IEEE, ASTM, UNCLASSIFIED

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ANSI, ETC.?

M. WHAT IS BASIS FOR REQUIREMENTS IN STANDARDS IN FRANCE? EXPERIENCE WITH OPERATING PLANTS? RESEARCH AND DEVELOPMENT? EXPERIMENTS OR ANALYSES OF STANDARDS-WRITING ENGINEERS?

N. HOW ANT TO WHAT EXTENT ARE STANDARDS USED IN THE REGULATORY PROCESS IN FRANCE?

O. WHAT ARE FRENCH DOING REGARDING LICENSING RADIOACTIVE MATERIAL IN CONSUMER PRODUCTS?

P. WE INFORMED THAT FRENCH CONDUCTED IMPORTANT EXPERIMENT ON PLUTONIUM "HOT PARTICLE" PROBLEM. CAN THEY DESCRIBE RESULTS OF EXPERIMENT AND POINT US TO DOCUMENTATION OF EXPERIMENT?

Q. WHAT ARE TITLES OF FRENCH STANDARDS ISSUED IN AREA OF NUCLEAR SAFETY, SAFEGUARDS, AND ENVIRONMENTAL PROTECTION? COULD COPIES BE PROVIDED TO US EITHER BEFORE THE MEETING OR AT MEETING IN NOVEMBER?

R. WHAT ADDITIONAL STANDARDS UNDER DEVELOPMENT OR
PLANNED?

S. FOREGOING REPRESENTS COMMENTS RECEIVED TO DATE FROM
AEC-REGULATION STAFF AND ESSENTIALLY SUBSTANTIVE
CHANGES TO BE PROPOSED FOR AGENDA. ANY ADDITIONAL
COMMENTS WILL BE FORWARDED TO MIR EXPEDITIOUSLY.

T. REQUEST ADVICE SOONEST REGARDING NAMES OF INDIVIDUALS
TO ATTEND MEETING, DATE OF ARRIVAL, AND HOTEL
REQUIREMENTS. KISSINGER

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